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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,083	09/09/2003	Takao Nishio	FL0178 US DIV	1436
23906	7590	06/21/2004	EXAMINER	
E I DU PONT DE NEMOURS AND COMPANY LEGAL PATENT RECORDS CENTER BARLEY MILL PLAZA 25/1128 4417 LANCASTER PIKE WILMINGTON, DE 19805			PARKER, FREDERICK JOHN	
			ART UNIT	PAPER NUMBER
			1762	
DATE MAILED: 06/21/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/658,083	Applicant(s) NISHIO, TAKAO	
	Examiner Frederick J. Parker	Art Unit 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/498215.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09/498215, filed on 2/4/2000. *Specification*

2. The disclosure is objected to because of the following informalities: (1) Page 1, line 1, the cross-reference to related applications is missing. Appropriate correction is required.

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The title should reflect the claimed subject matter.

Claim Objections

4. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 4,6-14 been renumbered 4-13 because numbered claim 5 was missing.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al US 6531559 in view of Ono et al WO99/48952 (US 6589597, which derives foreign priority therefrom, is used in lieu of a translation. All column/ line citations are taken from the US patent.).

Smith et al teaches that PTFE has advantageous properties (chemical and UV resistance, thermal resistance, etc) but fabricated PTFE products lack the advantages (density, void-free surfaces, etc) of other thermoplastic polymers (PE, nylon, etc), col. 1, 23 to col. 2, 9. Prior art methods to solve this problem sacrifice the beneficial physico-chemical properties of PTFE; hence the reference utilizes formable melt-processable PTFE compositions. Articles are made by forming means including molding, such as containers, bottles, tubes, pipes, etc. (col.8, 27-60). The bottom of col. 18 also notes the criticality of preventing voids which would have prevented use of PTFE in many applications. Coating the formed PTFE articles with a smooth heat-flowable fluoropolymer powder coating is not taught.

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Ono et al teaches an ETFE coating powder for corrosion-resistant coatings which may be applied to substrates, including molded parts (col. 5, 3) and plastics (col. 5, 24-25), by electrostatic powder coating. The coated substrates are then heat-treated by furnace means at 250-350 C to fuse the coating, followed by cooling for solidification (col. 4, 24 to col. 5, 5). The coating formed by the method may have a surface roughness Ra of at most 0.1 micron, per claims 11-13, which appears to be a reduced Ra relative to the substrate material. Col. 1, 7-11 teaches ETFE comprises tetrafluorethylene, per claim 2; PFA (col. 2, 29-32) per claim 3; and polyfluoropolymers encompassing hexa-fluoropropylene per claim 4. The application of the coating of fine smoothness to a PTFE surface generally containing voids would have reduced roughness by an amount depending on the Ra of the starting surface per claims 8-10. Coating thickness is usually at least 30 microns (col. 4, 49-51) which overlaps the thickness values of claim 14. The subject matter as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made if the overlapping portion of the coating thicknesses disclosed by the reference were selected because overlapping ranges have been held to be a prima facie case of obviousness, see *In re Wortheim* 191 USPQ 90. As to claim 6, while heat and temperature of crystallization are not explicitly taught, the same materials are used for the same purposes and outcomes. Since while heat and temperature of crystallization are inherent materials properties, the same materials would have been expected to possess the same inherent materials properties. As further evidence of this, heating points of up to 350 C are taught, which indicates materials having a temperature of crystallization of at least 305 C. Hence, recitation of specific heat and temperature of crystallization do not patentably distinguish over the prior art.

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the molded PTFE articles of Smith et al by applying the ETFE coatings of Ono et al to provide smooth surfaces with improved corrosion resistance and reduced surface roughness Ra of at most 0.1 micron.

8. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al US 6531559 in view of translation of JP 07-331012 (JP012). All page/ line citations are taken from the translation).

Smith et al is cited for the same reasons previously discussed, which are incorporated herein. Coating the formed PTFE articles with a smooth heat-flowable fluoropolymer powder coating is not taught.

JP012 teaches a fluoropolymer coating powder comprising PTFE and PFA with a heat of crystallization of 50 J/g or more (abstract) and heat of crystallization Tc of at least 306 C, see [0031] and table 1, which is applied to surfaces including molded objects [0014] to improve smoothness relative to conventional powders and improved physical properties ["Effects of the Invention"]. Electrostatic powder coating is used for application, and thermal treating is carried out at elevated temperatures, e.g. 360 C, to provide a final coating thickness of 80 microns [0046], per claim 13. Other polymer components includes hexafluoropropylene (FEP), see[0010], per claim 4. Since the powder coatings applied to molded articles are the same, it is the Examiner's position that the surface roughness and relative decrease in roughness between substrate and coating would have been the same or similar, per claims 7-12.

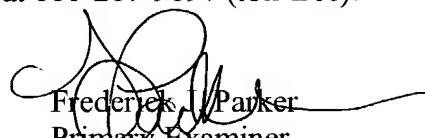
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It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the molded PTFE articles of Smith et al by applying the fluoropolymer coatings of JP012 to provide surfaces with reduced surface roughness and improved physical properties.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frederick J. Parker whose telephone number is 571/ 272-1426. The examiner can normally be reached on Mon-Thur. 6:15am -3:45pm, and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on 571/272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Frederick J. Parker
Primary Examiner
Art Unit 1762

fjp